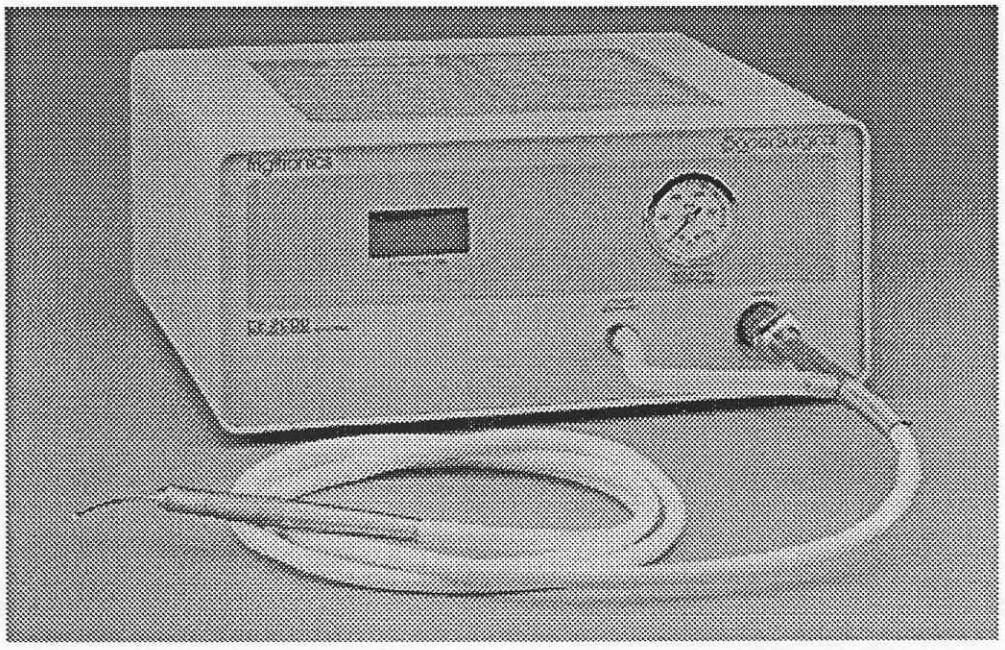
Operation and Maintenance Manual



CE-2000™

A Low-pressure, Non-electric
Fully-exhausted Cryosurgical System
with Backlight Digital Temperature Display

frigitronics.
Manufactured by
CooperSurgical, Inc.
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Identification

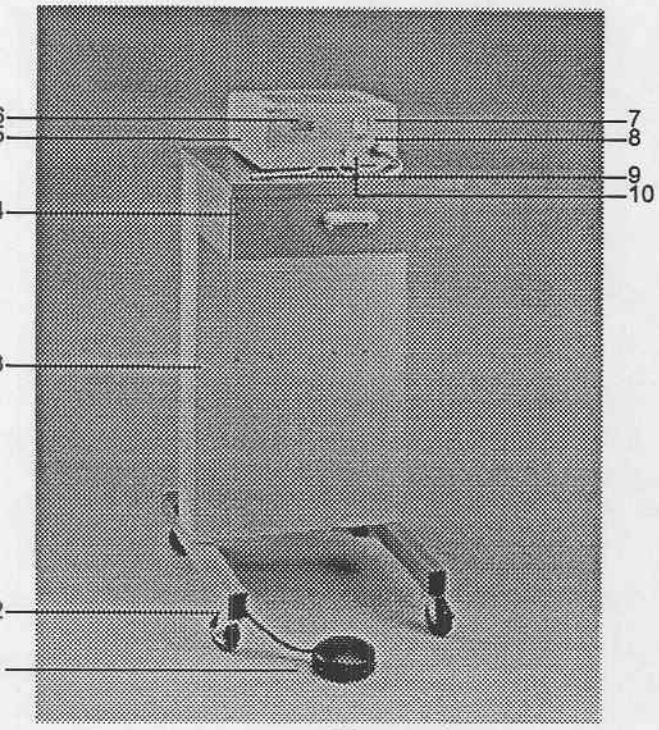


Figure 1

Front View

1 Foot Pedal
2 Locking Casters
3 Mobile Equipment Carrier
4 Utility Drawer
5 CE-2000 Console
6 Digital Temperature Indicator with Backlight (+75° to -150°C)
7 Regulated Pressure Gauge
8 Probe Jack and Dust Cap
9 Probe
10 Probe Exhaust Connector Tube and Dust Cap

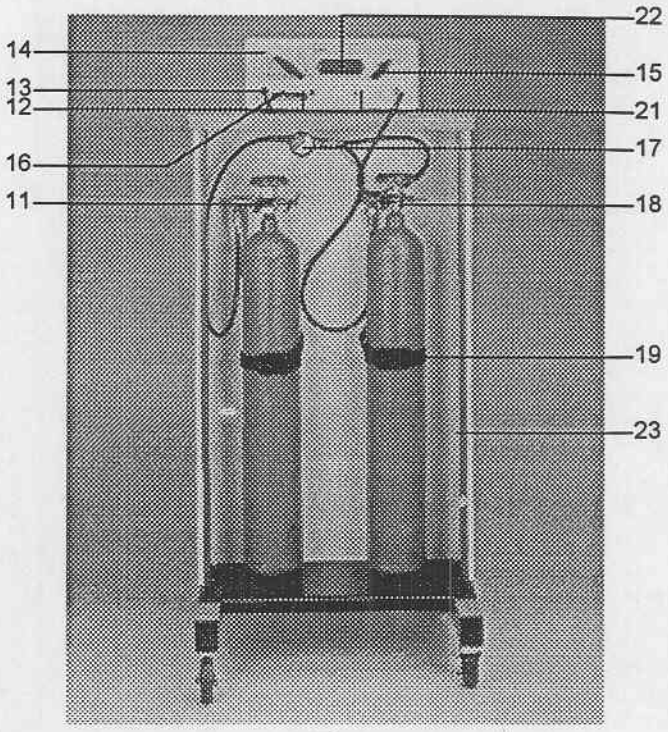


Figure 2

Rear View

11 Cylinder Yokes (2)
12 System Exhaust Connector
13 Foot Pedal Connection
14 Pressure Regulator Control
15 ON/OFF Control
16 Identification Plate
17 Cylinder Pressure Gauge (0-1000 psi)
18 30" Delivery Line
19 Cylinder Retainer Straps
20 Rear Exhaust Tube (not shown)
21 Backlight Toggle Switch
22 Battery Compartment: Two 9-Volt Batteries Required
23 Molding Trim

Specifications

CE-2000 Console
Size: 7" high, 12" wide, 11" deep
Weight: 10½ lbs.
Console Regulated Pressure: 400-625 psi
Nitrous Oxide Gas Operated
(carbon dioxide gas optional)

Mobile Equipment Carrier
Size: 40½" high, 19½" wide, 25" deep (with wheels)
Table Top: 19½" wide, 16½" deep
Weight: 58 lbs.
Type "E" Nitrous Oxide Cylinders
(2 required), or
20 lb. nitrous oxide cylinder
(2 required)

CAUTION: U.S. Federal law restricts this device to sale by or on the order of a physician.

Introduction

The Frigitronics CE-2000 is a *completely non-electric, low-pressure, fully-exhausted* cryosurgical system that uses readily available nitrous oxide gas.

The System provides controlled freezing temperatures down to a maximum of -89°C. This advanced System is designed to perform procedures in Ophthalmology as well as Otolaryngology, Gynecology and Proctology. The complete CE-2000 Cryosurgical System consists of a control console with foot pedal, mobile equipment carrier, nitrous oxide cylinders and cryosurgical probes.

The system operates on the Joule-Thomson principle where pressurized gas expands through a fine orifice producing a rapid drop in temperature. Rapid freezing of the probe tip is started by depressing the foot pedal. Release of the foot pedal causes warm low pressure gas to flow through the probe for defrosting. The backlight display activates automatically when the foot pedal is depressed.

An *automatic shut-off* built into the system will stop the flow of nitrous oxide gas and will shut off the backlight and display approximately 4 minutes after the probe has been set aside. The system can be reactivated by simply depressing the foot pedal. A *wide range of probes* are available for use with the CE-2000 and are outlined on page 8.

Unpacking and Set-up

Unpacking

The CE-2000 console is packaged with the following items: console with attached foot pedal (boxed), a delivery line, a front and rear exhaust hose, and two 9-volt batteries. The mobile equipment carrier is packaged with 4 locking casters, mobile equipment frame with attached cylinder harness, and two cylinder handles ("E" cylinders only). Check all packing material for accessories and components. *Please read this operation manual carefully before using the System.*

Set-up

1 Unwrap foot pedal and affix the CE-2000 console (5) to top of carrier by aligning the four pads on bottom of console to the pads on the top of the carrier, pushing down firmly on top corners to secure console.

2 Install two 9-volt batteries for backlight display: one for display, and one for backlight.

For set-up of the console without the mobile equipment carrier, place the console on a secure surface and proceed with cylinder installation.

Installation of Cylinders

Medical Grade nitrous oxide cylinders are locally available worldwide. Consult your local yellow pages under: Gas-Medical or Welding Supplies. Be sure to specify medical grade nitrous oxide gas. The CE-2000 System is designed to utilize *nitrous oxide gas, preferred, or carbon dioxide gas. Each system is shipped with nitrous oxide cylinder yokes unless CO_2 yokes were specified when ordered.*

1 Position both cylinders onto mobile carrier base and secure in place by fastening buckles. Tighten straps as required.

2a) 20 lb. Cylinder Connection
Height - 25"; circumference - 24" per tank 20 lbs. cap. N_2O per cylinder. Inspect seal for cuts, tears, etc. and replace if required. Hand tighten yoke onto cylinder. If leak exists, use wrench to secure.

2b) "E" Cylinder Connection
Place optional "E" cylinder (6 lbs. cap. N_2O per cylinder) yokes and washers over both cylinder valves, positioning yoke indexing pins in cylinder valve holes, and hand tighten yokes. Place handles on cylinders. Replace washers with each cylinder change. DO NOT OPEN CYLINDERS AT THIS TIME.

2c) Gas Purifier Filter (optional)
Filters are available on all N_2O eye systems. Filters improve freeze capability because unwanted oils, water and other N_2O contaminants are removed from gas prior to delivery to probe tips.
NOTE: Replace filters with each cylinder change or as required.

Installation of Console

1 With cylinders turned *off* connect the rear console delivery hose to cylinder pressure gauge (17) on rear of carrier. Tighten hose fitting with a 5/8" or adjustable wrench.

2 Attach rear exhaust tube (20) to console. Remove probe jack dust cap. Connect desired probe to console by inserting probe end plug into probe jack (8). Insert the plug while holding console firmly. Insure that safety latch on plug is locked into groove on jack by gently tugging on probe end. To scavenge the N_20 gas, remove dust cap from probe exhaust on front of console and connect 6" front exhaust tube from probe to front of console (10).

Checking the System

Gas Exhaust
Nitrous oxide gas can be exhausted in the following manner:

1 Vent directly outside, via exhaust tube (19).
2 Vent into the room exhaust ventilation system that vents directly outside
3 Connect to a vacuum/suction system that vents outside.

Important: The vent tube should be run overhead to prevent accidental restriction of the exhaust gas flow.
DO NOT RESTRICT THE GAS FLOW IN ANY WAY.
Minimum System Capacity, 40 L/Min.
Use only exhaust hoses provided by CooperSurgical.

Installation of Probes
A few precautions should be followed when using cryosurgical probes:

The regulated pressure gauge should read 0 psi.

Do not constrict, kink, bend, lay objects on, or otherwise damage or restrict probe or exhaust lines.

Do not block exhaust holes at end of probe line where the probe plugs into console.

Do not attempt to insert or remove probe at the probe jack when the CE-2000 console is pressurized.

Thermocouple Probes
Plug desired thermocouple probe into probe jack (8) on front of console, remove dust cap on front exhaust connector (10) and connect 6" probe exhaust tube to front exhaust connector. The digital probe tip temperature indicator (6) will indicate the temperature at the probe tip once the foot pedal is activated.

Digital Temperature Display with Backlight
The CE-2000 is equipped with a backlight digital temperature display, which operates on two 9-volt batteries (rear panel); one specific to the display and one for the backlight. To activate the backlight for low light procedures, place the toggle switch, located on the rear of the unit, in the ON position.

Both the digital temperature display and the backlight (toggle in ON position) will automatically activate when the foot pedal is depressed, provided the gas supply is ON and operational. An internal pressure switch activates the backlight display. The display and backlight will automatically turn off in approximately four minutes as the flow of gas is automatically shut off.

A "LO BAT" will display when the batteries for the temperature display should be replaced. Replace the battery for the backlight when it begins to dim. The battery for the display has a longer expected life than the backlight battery.

No Calibration is Required. Display is calibrated at CooperSurgical.

Operation of System

1 With probe and front and rear exhaust tubes connected to the CE-2000 console and desired probe in place, open cylinder valves. Turn On/Off control "on" and adjust pressure control (14) to obtain desired operating pressure. The operating pressure range of this System is 400-625 psi. Recommended probe settings are listed on page 8. To decrease a pressure setting, depress foot pedal several times while adjusting.

To activate the backlight for low light procedures, place toggle switch on the rear panel in "ON" position.

The size of the ice ball at the probe tip is dependent on the pressure of the nitrous oxide gas and the heat load. As pressure is increased, temperature decreases, thus producing a larger ice ball.

2 Precool the probe tip by depressing the foot pedal for 10 seconds and then release pedal defrosting for several minutes. A defrosted probe applied to target area provides maximum adhesion.

3 Apply probe tip to target area; depress foot pedal to freeze, release foot pedal to defrost.

NOTE: A flow of gas can be heard in the probe during the freeze and defrost cycles. This is normal in a functioning system. After probe sterilization and prior to use, allow the probe to cool down at least 20 minutes. Then depress the foot pedal for a few seconds and release to allow the warm defrost gas to purge any moisture from the probe.

To Exchange Probes

1 Turn the On/Off control (15) *off*.

2 Depress the foot pedal (1) several times to relieve the nitrous oxide gas in console, prior to removing probe. Regulated pressure gauge should read 0 psi.

3 Remove probe and exchange.

To Exchange Cylinders

1 Turn cylinder valves off (clockwise).

2 Depress the foot pedal several times to relieve the nitrous oxide gas in console, prior to removing probe. Regulated pressure gauge should read 0 psi.

3. Exchange cylinders.

Shut Down

1 Turn cylinder valves off (clockwise).

2 Depress the foot pedal several times to relieve the nitrous oxide gas in console, until front pressure gauge reads 0 psi.

3 Turn On/Off control to *off*.

4 Turn backlight toggle switch to *off*.

5 Remove probe.

Care and Maintenance

The CE-2000 should be handled with the care appropriate to any precision instrument. Avoid dropping or mishandling the System and probes. Periodically inspect the hoses, fittings and probes for any damage or wear. Other than maintaining an adequate supply of medical grade nitrous oxide gas and two 9-volt batteries for the backlight display, the System is essentially maintenance-free.

Cleaning
The control console, mobile equipment carrier and other exposed parts of the System may be wiped with any mild soap solution that is commonly used to clean equipment in the operating room. All surfaces with the exception of the pressure and temperature display may be wiped with alcohol.

Probe Sterilization
All CE-2000 probes and insulating sleeves/boots can be flash autoclaved for convenient sterilization between cases. Where possible, removable sleeves/boots should be sterilized separately. The probes and sleeves/boots can also be sterilized by either ethylene oxide gas or steam. Probe should be allowed to cool down at least 20 minutes prior to use. After sterilization and prior to use, the probe should be run in the defrost mode for several minutes to ensure that any moisture in the probe is removed.

Storage
Store nitrous oxide cylinders, CE-2000 System and probes indoors at room temperature, 60° - 75°F.

Cautions

1 Nitrous oxide gas must be safely exhausted. Do not restrict or limit the gas flow in any way.

2 Always insure that the safety latch is engaged when inserting the probe plug into the probe jack on the front of the unit.

3 Use CSI part number 20566 Front Exhaust Tube *only* for connection to probe.

Troubleshooting CE-2000 Cryosurgical System

blem		Cause		Remedy
Probe does not freeze properly	1	On/Off valve *off*.	1	Turn valve *on*.
	2	Cylinder valves closed.	2	Open valves.
	3	Cylinder pressure below 600 psi.	3	Replace cylinders.
	4	Cylinders are cold.	4	Allow to warm to room temperature (70°F).
	5	Foot switch not depressed.	5	Depress foot switch completely.
	6	Regulated pressure too low.	6	Adjust regulated pressure to proper setting.
	7	Probe plug not properly engaged.	7	Insure that probe plug is fully engaged and locked in position.
	8	Probe tip temperature not recording on digital temperature display.	8	Refer to section D.
	9	Leaks in serviceable areas.	9	Tighten fittings and replace washer in cylinder yoke or replace probe jack "O" ring P/N 20440.
	10	Moisture in probe or probe not cooled after autoclaving.	10	Allow defrost gas to flow through the probe to purge.
	11	Contaminated Nitrous Oxide Gas (or CO_2).	11	Replace cylinders.
	12	Console or probe malfunction.	12	Connect a second probe to console and test.
Probe does not defrost properly	1	Crimped probe or exhaust line.	1	Check lines for restrictions.
	2	Dirty filter in probe line plug.	2	Remove surface contaminates with a nylon brush and retest probe.
	3	Probe does not defrost during operation.	3	Immediately flood tip area with sterile saline solution to defrost and shut console off.
Premature defrost	1	Foot switch not fully depressed for freeze mode.	1	Depress foot switch completely.
	2	Moisture in probe or probe not cooled after autoclaving.	2	Allow defrost gas to flow through the probe to purge.
	3	Contaminated Nitrous Oxide Gas (or CO_2).	3	Replace cylinders.
Digital Temperature Display - no temperature or backlight	1	No display.	1	Turn gas ON, insert probe and activate foot pedal. Replace 9-volt battery.
	2	No backlight.	2	Turn toggle to ON position, turn gas on and insert probe. Activate foot pedal. Replace 9-volt battery.
	3	Probe in use does not contain a thermocouple.	3	Check that probe is thermocouple type.
On/Off valve or pressure regulator knob does not operate properly	1	Knob is loose on the shaft.	1	Tighten knob with allen wrench.
Difficult to insert probe into probe socket/or leaks	1	No lubricant.	1	Apply a small amount of lubricant, e.g., syringe lubricant, to the probe shank that is inserted into the console. Do not place lubricant on gold plug. Twist probe shank while inserting to lubricate "O" Ring P/N 20440.
	2	"O" Ring damaged.	2	Replace with new "O" Ring P/N 20440.
Exhaust hose slips off console or probe	1	Exhaust line restricted.	1	Check exhaust lines for restriction and correct.
	2	External exhaust source restricted or not adjusted correctly.	2	Check venting or suction system for restrictions and correct adjustment.

NOTE: If above corrective action does not rectify the problem please contact the CooperSurgical Service Department for assistance at (203) 929-6321 or (800) 243-2974.

User Information

Replacements parts for the CE-2000 Console

Part Number	Description	Item # (illustrated on Page 2)
20370-3	30" Delivery Line	18
20566	Front Exhaust Tube 6"	10
32873	Rear Exhaust Tube 20'	20
22333	ON/OFF Knob	15
34029	Regulator Knob	14
20440	"O" Ring Probe Jack	8
32874	Cap, plug, front panel exhaust	10

Replacement parts for all Mobile Carriers

Part Number	Description	Item # (illustrated on Page 2)
20398	Casters Braking	2
30646	Base, legs	2
21705	Hedlok fasteners	Not Shown
20364	Tank handles, "E" cylinder	11
30740	Molding, trim	23
20371	Washer, nylon, pin index yoke	11
20917	Yoke, pin index, "E" cylinder	11
10978 & 21836	20 lb. cylinder yoke	Not Shown
21837	20 lb. cylinder yoke seal	Not Shown
51875	Pressure gauge	17
20370-3	30" Delivery Line (2 required)	18

NOTE: There are no user-serviceable parts contained in the console. The CE-2000 Cryosurgical System and cryoprobes should be returned to CooperSurgical for servicing.

Cryosurgical Probes

CSI provides a wide range of Frigitronics® cryosurgical probes for use with the CE-2000 System. Each slender, well-balanced, lightweight probe offers you the versatility for performing a wide variety of procedures. All probes contain thermocouples for probe tip temperature reading, unless noted.

ndard rt Number	Supercool Part Number	Probe Description	Shaft Length	Shaft Diameter	Tip Length	Tip Diameter	Recommended Setting
hthalmology Probes							
4	162	Retinal, Straight	38mm	2.5mm	—	2.5mm	600 to 625 psi
5	161	Retinal, Curved	38mm	2.5mm	—	2.5mm	600 to 625 psi
3-4		Retinal, Straight w/fiber optic illumination	40mm	4.0mm	—	3.2mm	600 to 625 psi
3-5		Retinal, Curved w/fiber optic illumination	40mm	4.0mm	—	3.2mm	600 to 625 psi
6		Cataract, Straight	27mm	1.8mm	1.0mm	1.8mm	500 to 625 psi
7		Cataract, Curved	27mm	1.8mm	1.0mm	1.8mm	500 to 625 psi
8		Micro, Straight	27mm	1mm	—	1mm	500 to 625 psi
0	164	Glaucoma (165 curved)	38mm	3.5mm	1.5mm	3.5mm	450 to 625 psi
7		Micro, Curved	27mm	1mm	—	1mm	450 to 625 psi
4*		Vitreous, Intraocular (20 gauge)	35mm	.89mm	—	.89mm	450 to 625 psi
9	163	Retinal, Spherical	28mm	2.1mm	—	3mm sphere	600 to 625 psi
3		Retinal, Curved Hammerhead	40mm	2.5mm	6.5mm wide	3.5mm	600 to 625 psi
4		Retinal, Straight Hammerhead	40mm	2.5mm	6.5mm wide	3.5mm	600 to 625 psi
	142	Retinal, Posterior	38mm	2.7mm	—	2.7mm	600 to 625 psi
5		Retinal, Straight Hammerhead w/fiber optics	40mm	2.5mm	6.5mm wide	4.5mm	600 to 625 psi
6		Retinal, Curved Hammerhead w/fiber optics	40mm	2.5mm	6.5mm wide	4.5mm	600 to 625 psi
	166	Oversized Retinal, Straight	38mm	3.2mm	—	3.2mm	600 to 625 psi
	167	Oversized Retinal, Curved	38mm	3.2mm	—	3.2mm	600 to 625 psi
iatric Retinal							
*		1.5mm Spherical Retinopathy	34mm	1.5mm	1.5mm sphere	—	450 to 625 psi
		2.08mm Pediatric Retinal Curved	27mm	2.84mm	1mm	2.08mm	450 to 625 psi
		1.88mm Pediatric retinal Curved	26mm	2.54mm	1mm	1.88mm	450 to 625 psi
*		4mm Hammerhead	34mm	1.5mm	4mm	1.5mm	450 to 625 psi
*		6mm Hammerhead	34mm	1.5mm	6mm	1.5mm	450 to 625 psi
*		3mm Disc Probe	35mm	1.5mm	3mm	1.5mm	450 to 625 psi
chiasis							
		18 ga. Cone Probe	19mm	1.3mm	—	—	450 to 625 psi
		3mm Multi-Lash	19mm	2.8mm	5mm	2.7mm	450 to 625 psi
		6mm Multi-lash	19mm	2.8mm	5mm	2.7mm	450 to 625 psi
laryngology Probes							
		Mouth	130mm	4.8mm	—	19mm	600 to 625 psi
		Nasal, Curved	130mm	4.8mm	—	19mm	600 to 625 psi
		Nasal, Straight	150mm	3.2mm	11mm	3.2mm	600 to 625 psi
		Laryngeal	310mm	3.5mm	12.5mm	3.5mm	600 to 625 psi
		Infant trachea Probe	250mm	2.4mm	5.0mm	2.4mm	600 to 625 psi
		Trachea Probe	400mm	3.4mm	5.0mm	3.4mm	600 to 625 psi
necology Probes							
		Cervix	125mm	5mm	8mm	19mm	600 to 625 psi
		Condyloma	118mm	5mm	16.5mm	6mm	600 to 625 psi
ctology Probe							
		Hemorrhoid	135mm	6mm	—	10mm	600 to 625 psi

ermocouple

Probe Sterilization

Recommended sterilization procedures for CE-2000 probes:

The CE-2000 probes can be ETO gas sterilized, steamed or flash autoclaved. For convenience, most users flash autoclave their operating room instruments where possible.

CSI recommends:

Flash Autoclave

- 280°F maximum temperature
- Three minutes minimum at 272°F temperature
- Extended exposure time is required for lower temperatures

ETO Gas Sterilize

- 140°F maximum temperature
- 12/88 ETO/Freon mixture
- 40% minimum humidity
- 12-15 hour forced aeration cycle (normally overnight)

Prior to sterilization, all probes must be "wiped" clean of blood and contaminants (alcohol recommended).

Do not immerse probe in any solution

The above cycles and conditions will vary. The actual degree of sterility is dependent on the equipment, maintenance of equipment, cycle and product to be sterilized.

Again, the above recommendations match those cycles presently used successfully on our product in the field.

Sleeve Sterilization

- It is recommended that sleeves (used with retinal probes Nos. 124, 125, 142, 143, 144, 145, 146, 708-4, 708-5, 161, 162, 166 and 167) be removed and cleaned before sterilization. Sleeves may be sterilized using same technique as mentioned above for probes. Use (sterile) alcohol to lubricate sleeve before reapplying to probe.

- Do not remove sleeves from pediatric probes Nos. 121, 123, 148 or 149. Sleeves may be removed from pediatric probes Nos. 120 and 122 (reorder #33555 — package of six).

- Spherical probe #139 may be sterilized with sleeve.

Cartridge Replacement

Filter assembly for nitrous oxide and carbon dioxide gases.
Removal of oils and water.

1. Shut off the valve or valves at all supply cylinders.
2. Bleed off the gas in the lines until the pressure gauge reads "0".
3. Unscrew the shell casing from the assembly.
4. Unscrew the cartridge from the assembly and discard.
5. Each cartridge is supplied in a hermetically sealed container. Open the container and remove new cartridge. NOTE: Do not remove purifier cartridge from hermetically sealed container until ready to install in purifier.

6. Screw the new cartridge into the assembly, and screw the shell casing into place. Ensure that the "O" ring seal is properly seated. If difficulty is encountered when installing the shell casing due to the "O" ring, replace worn "O" ring with new replacement. "O" rings may have to be replaced with each cylinder change.
7. After all fittings are secured, open valves at the cylinders and check the filter assembly for leaks.
8. It is recommended that the filter be replaced with each cylinder change.

Reorder No.

P191 Replacement Cartridge (package of 6)

COOPERSURGICAL
15 Forest Parkway
Shelton, Connecticut 06484
(800) 243-2974 (203) 929-6321
Fax (203) 926-9435

This product represents years of progress in the design and manufacture of precision instruments and equipment. Its quality has been rigidly safeguarded by exacting inspections throughout manufacture and it carries the final inspector's stamp of approval.

WARRANTY

The COOPERSURGICAL product is warranted against defective material and workmanship (under normal use and application) for a period of one year from date of invoice. Under the Warranty, COOPERSURGICAL'S sole obligation is to repair or replace at COOPERSURGICAL'S discretion, the product or defective part thereof.

Lamps, bulbs, filters, batteries, etc. and other expendable items are not covered by this Warranty.

This Warranty applies only to new products and does not apply to a product which has been tampered with or altered in any way; or has been misused or damaged by accident or negligence; or which has the serial number removed, altered or effaced; nor shall this Warranty extend to a product installed or operated in a manner not in accordance with the applicable instruction manual; nor to a product which has been serviced or repaired, other than by COOPERSURGICAL.

All claims under this Warranty must be directed to COOPERSURGICAL, 15 Forest Parkway, Shelton, Connecticut 06484, (203) 929-6321, 800-243-2974.

Returns for repair or replacement under Warranty shall be shipped to the Warranty Department at COOPERSURGICAL, 15 Forest Parkway, Shelton, Connecticut 06484 -- freight or postage prepaid. Repaired or replacement units shall be returned to the customer prepaid.

In consideration of the foregoing promises by seller, buyer agrees that this Warranty is in lieu of all Warranties implied or expressed, and no representative or person is authorized or allowed to make any obligation for COOPERSURGICAL not in accordance with the above.

frigitronics®
A PRODUCT LINE OF COOPERSURGICAL

CE-2000™ OPHTHALMIC CRYOSURGERY SYSTEM

Digital backlit temperature display

Automatic shut off

Safe and effective low pressure freeze & defrost

Wide array of rapid freeze and defrost probes

CONTINUING TO SET THE COLD

CE 2000™ Ophthalmic Cryosurgery System

With over 25 years experience in the development of ophthalmology equipment, the new CE-2000™ by frigitronics® presents a significant step in the evolution of ophthalmic cryosurgical systems.

Designed to meet unique performance criteria, it is a completely non-electric, battery operated, low pressure and fully exhausted system.

The digital backlit temperature display improves visibility for monitoring the probe tip temperature required during the low light procedures such as retinal detachment and scleral buckle.

Freezing temperatures can be controlled to -89°C. Rapid probe tip freeze and display panel activation occurs by depressing the radial touch foot pedal. Releasing the foot pedal allows the probe to defrost.

The probe tip temperature indicator ensures constant reproducible results. In addition, complete gas scavenging occurs throughout the procedure.

An automatic shut off has been incorporated into the system to conserve the flow of cryogen approximately 4 minutes after release of the foot pedal.

frigitronics®
A PRODUCT LINE OF COOPERSURGICAL

PEDIATRIC RETINAL

SUPER COOL PROBES
30% FASTER FREEZE

Standard In Your Practice

Simultaneously, the backlit display will shut off to conserve the batteries. A simple reactivation of the footswitch will start the freeze and light the display.

The broad array of cryoprobes used to treat retina damage, glaucoma, trichiasis, retinopathy of prematurity and cataracts complement the system. The probe locating nib indicates the position of the freeze tip.

Retinal Probe Fiber Optic Scleral Transilluminator Package Ensures Accurate Placement of Freeze Tip.

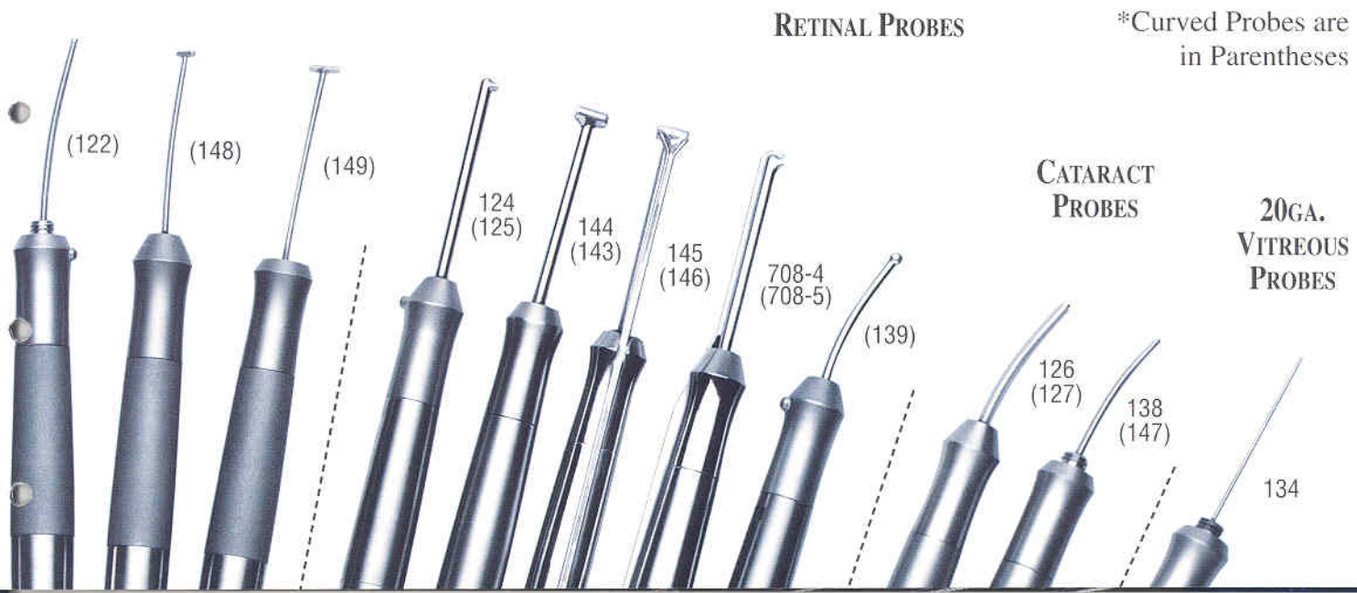
Featuring, the HS4100™ Halogen Lightsource and fiber optic cable, choose from our group of retinal probes to complete your scleral transilluminator package. The high quality fiber optics produce a cool 0.7mm diameter pinpoint of light that can be viewed through the thickest of sclera.

If you would like more information about the CE-2000™ as well as any of our ophthalmology products and accessories, please telephone 800-645-3760.

Various cart configurations allow the system to be used in numerous practice locations (hospital and office).

HS4100™ Halogen Lightsource

(EOP) Probes



Part #	Description	Shaft(mm) Length	Shaft(mm) Dia.	Tip (mm) Length	Tip (mm) Dia.	Applications
Trichiasis Probes						
171	18 ga. Cone Probe	19mm	1.3mm	-	-	• Single lash
172	3mm Multi-Lash Probe	19mm	2.8mm	5mm	2.7mm	• Multi-lash
173	6mm Multi-Lash Probe	19mm	2.8mm	5mm	2.7mm	• Benign eyelid tumors
Super Cool Probes						
142	Posterior Retinal	38mm	2.7mm	-	2.7mm	• Posterior segment cryopexination (142)
161	Curved Retinal	38mm	2.5mm	-	2.5mm	• Retinal tears
162	Straight Retinal	38mm	2.5mm	-	2.4mm	• Retinal holes
163	Spherical Retinal	28mm	2.1mm	-	3.0mm	• Retinal detachment
164	Straight Glaucoma	38mm	3.5mm	-	3.5mm	• Glaucoma-cyclocryotherapy
165	Curved Glaucoma	38mm	3.5mm	-	3.5mm	• Anterior segment cryopexination (163)
166	3.2mm Straight Retinal	38mm	3.2mm	-	3.2mm	• Benign eyelid tumors
167	3.2mm Curved Retinal	38mm	3.2mm	-	3.2mm	• Benign periorbital tumors
Pediatric Retinal Probes						
122*	1.5mm Spherical	34mm	1.5mm	-	1.5mm	• Retinopathy of prematurity
121	2.08mm Curved	27mm	2.8mm	1mm	2.08mm	• Retinal tears
120	1.88mm Curved	26mm	2.5mm	1mm	1.88mm	• Retinal holes
148*	4mm Hammerhead	34mm	1.5mm	4mm	1.5mm	• Retinal detachment
149*	6mm Hammerhead	34mm	1.5mm	6mm	1.5mm	• Large retinal damage
123*	3mm Disc Probe	35mm	1.5mm	3mm	1.5mm	
Cataract Probes						
126	Straight	27mm	1.8mm	1.0mm	1.8mm	• Cataract extraction
127	Curved	27mm	1.8mm	1.0mm	1.8mm	• Retrieval of dislocated and subluxated lenses
128	Micro Straight	27mm	1.0mm	-	1.0mm	• Intravitreal foreign body extraction (magnetic and non-magnetic)
147	Micro Curved	27mm	1.0mm	-	1.0mm	
Vitreous Intraocular Probe						
134*	20 ga. Vitreous	35mm	.89mm	-	.89mm	• Treatment of retinal breaks - Endocryopexy • Intravitreal foreign body extraction (magnetic and non-magnetic) • Positioning or removal of dislocated or subluxated lens • Endocryoagulation
Retinal Probes						
124	Straight	38mm	2.5mm	-	2.5mm	• Retinal tears
125	Curved	38mm	2.5mm	-	2.5mm	• Retinal holes
139	Spherical	28mm	2.1mm	-	3.0mm	• Retinal detachment
143	Hammerhead, Curved	40mm	2.5mm	6.5mm	3.5mm	• Large retinal tears and holes; hammerhead probes
144	Hammerhead, Straight	40mm	2.5mm	6.5mm	3.5mm	• Anterior segment cryopexination
145	Hammerhead, Straight	40mm	2.5mm	6.5mm	4.5mm	• Precise freeze location (scleral transilluminator probes) with fiber optic illumination
146	Hammerhead, Curved with fiber optic illumination	40mm	2.5mm	6.5mm	4.5mm	
708-4	Straight Retinal Probe with fiber optic illumination	40mm	4.0mm	-	3.2mm	
708-5	Curved Retinal Probe with fiber optic illumination	40mm	4.0mm	-	3.2mm	
P704	Fiber Optic Retrofit for 124 or 125 Retinal Probes					
HS4100	Light Source, Fiber Optic (1500 candle power)					
705	Light Carrier, Fiber Optic (seven feet long)					
502	Light Source Stand Assembly					

*Without Thermocouple

Carbon Dioxide (CO_2) is available as an optional cryogen. Treatment time may necessitate an increase to match Nitrous Oxide results.

Additional Probes Available for Otolaryngology, Gynecology, Proctology & Cryoanalgesia.

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